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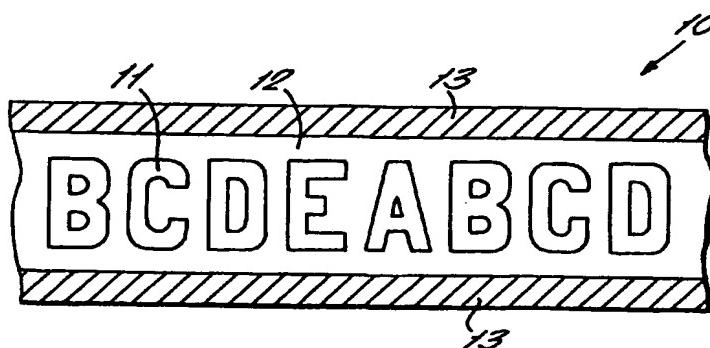
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## Declarations under Rule 4.17:

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD,

[Continued on next page]

(54) Title: SECURITY THREAD



(57) Abstract: The current invention relates to a security element for security substrates, such as those used for banknotes and the like, having enhanced public recognition, anti-counterfeit and detection properties. A security element comprising an elongate strip of a light transmitting polymeric substrate, said substrate being provided with a magnetic feature and a metallic design, the metallic design being provided by a combination of metal and non-metallic regions and comprising indicia, characters, patterns, designs, or geometrical shapes or a combination of the aforesaid design comprising at least one repeating pattern of which one or more of the frequency, the instantaneous amplitude and/or the maximum amplitude of the pattern varies along the length of the element, said pattern being positioned relative to the magnetic feature such that it does not overlap therewith.



SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)  
— of inventorship (Rule 4.17(iv)) for US only

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

# INTERNATIONAL SEARCH REPORT

International Application No  
/GB2004/000077

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B42D15/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B42D D21H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 92/11142 A (GAO GES AUTOMATION ORG) 9 July 1992 (1992-07-09) cited in the application</p> <p>page 7, line 1 - page 11, line 3; figures 2-6</p> <p>-----</p>	<p>1-10, 13-15, 17, 19-23,25</p>

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

Date of the actual completion of the international search

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# INTERNATIONAL SEARCH REPORT

national application No.  
PCT/GB2004/000077

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: **26**  
because they relate to subject matter not required to be searched by this Authority, namely:  
**Rule 6.2(a)**
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

**INTERNATIONAL SEARCH REPORT**

ational Application No
/GB2004/000077

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9211142	A	09-07-1992	DE 4041025 A1 25-06-1992
		AT 143871 T 15-10-1996	
		BR 9106119 A 02-03-1993	
		CA 2076532 A1 21-06-1992	
		DE 59108270 D1 14-11-1996	
		DK 516790 T3 17-03-1997	
		WO 9211142 A1 09-07-1992	
		EP 0516790 A1 09-12-1992	
		ES 2092090 T3 16-11-1996	
		FI 923700 A 18-08-1992	
		GR 3021431 T3 31-01-1997	
		KR 189654 B1 01-06-1999	
		NO 923258 A 19-10-1992	
		PL 168961 B1 31-05-1996	
		PL 169626 B1 30-08-1996	
		SI 9210004 A ,B 28-02-1995	
		US 5599047 A 04-02-1997	
		US 5803503 A 08-09-1998	
		US 5354099 A 11-10-1994	